

REMARKS

Favorable reconsideration and allowance of this application are requested.

1. Discussion of Amendments

By way of the amendment instructions above, the inadvertent mislabeling of claim 19 which was helpfully noted by the Examiner has been corrected. Accordingly, it is believed that the objection advanced against the prior pending claims has been mooted.

Claim 19 has also been amended so as to clarify that the heat transfer liquid concentrate is for solar plants and that the one or more silicates of component b) have been stabilized by organosilicophosphonates and/or organosilicosulfonates. Claim 26 has therefore been canceled as redundant.

Following entry of this amendment, therefore, claims 19-25 and 27-40 will remain pending herein for which favorable action is solicited.

2. Response to 35 USC §103(a) Issues

Claims 19-24 and 33-36 attracted a rejection under 35 USC §103(a) as allegedly being "obvious" and hence unpatentable over Tachiiwa et al (EP 0 299 942). In addition, claims 25-27 attracted a rejection under the same statutory provision as allegedly "obvious" over Tachiiwa et al in view of Oppenlaender et al (USP 5,064,552). Finally, claims 37-40 were rejected under 35 USC §103(a) as "obvious" from Tachiiwa et al in view of Smith (USP 4,117,682). Applicants respectfully disagree.

In this regard, the Examiner will recall that presently pending claim 19 is drawn to a heat transfer liquid concentrate for solar plants comprising:

- at least one glycol,
- at least one amine (according to the definition of a)), and
- one or more silicates.

In contrast, Tachiwa et al. discloses an antifreeze composition for automotive engines comprising:

- at least one glycol,
- at least one phosphoric acid compound, and
- one or more silicates.

The Examiner's position appears to be that an ordinarily skilled person would have found it "obvious" to employ the Tachiwa et al antifreeze compositions in a solar plant as they represent analogous technological fields and thus part of the content of the prior art to be examined when determining patentability under 35 USC §103(a). The argumentation of the Examiner is not persuasive.

(i). Person skilled in the art

The person skilled in the art for the present invention is a scientist for the development of heat transfer liquids for solar plants. The problem to be solved by the present invention is the inhibition of glass corrosion in solar plants, in which the heat transfer liquid is directly in contact with glass (see page 2, lines 27-31 of the specification as originally filed). This problem is solved by the heat transfer liquid according to presently pending claim 19.

The person skilled in the art would therefore not seek guidance to the solution of this problem in the teachings of Tachiwa et al. for at least the following reason.

Tachiwa et al. describes a totally different application area - antifreezing compositions for automotive engines. Moreover, the problem to be solved by the teaching of Tachiwa et al. is the corrosion inhibition of aluminum alloys (see page 2, line 55 of Tachiwa et al) and other metal materials – not glass.

Due to the different materials (glass vs. metal) and the different application areas, a person skilled in the art would not use the teaching of Tachiwa et al. to obtain guidance for heat transfer liquids for solar plants.

Thus Tachiiwa et al and the presently claimed invention are in disparate art areas that are most certainly *not* analogous to one another. Thus, Tachiiwa et al is in an art which is disparately nonanalogous to the present invention and, as such, is inappropriate for use as a reference when making patentability determinations under 35 USC §103(a).¹ Two criteria are employed to determine whether a reference is from nonanalogous art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed; and if not, (2) whether the reference reasonably pertains to the particular problems with which the inventor is involved.²

Here, it is quite clear that the first of the two criteria is not met since the field of endeavors of Tachiiwa et al and that of the present applicants is not even remotely similar let alone the same – i.e., antifreeze compositions for automotive engines in Tachiiwa et al and heat transfer liquids for solar according to the present invention.

Moreover, the problems encountered by Tachiiwa et al and the present applicants are completely *not* pertinent at all to one another. That is, the problem encountered in Tachiiwa et al was to antifreezing and noncorrosive capabilities to *aluminum alloys and other metals* associated with an automotive internal combustion engine. On the other hand, the problems encountered by the present applicants included providing a heat transfer liquid that reduces or eliminates entirely corrosion in glass when in direct contact therewith.

As a result, therefore, neither of the legal criterion is met thereby making it abundantly clear that the cited Tachiiwa et al reference is from nonanalogous art, and as such, is inappropriate for use in a rejection advanced under 35 USC §103(a).

¹ "Although §103 does not, by its terms define the 'art to which [the] subject matter [sought to be patented] pertains,' this determination is frequently couched in terms of whether the art is analogous or not, i.e., whether the art is 'too remote to be treated as prior art.'" *In re Clay*, 23 USPQ2d 1058, 1060 (Fed. Cir. 1992) *citing In re Sovish*, 226 USPQ 771, 773 (Fed. Cir. 1985).

² *Id.* at 1060. See also, *Union Carbide Corp. v. American Can Co.*, 220 USPQ 584, 588-589 (Fed. Cir. 1984).

(ii). Tachiwa et al Leads Away From Claimed Invention

Even assuming for the sake of argument that the ordinarily skilled person would use the teaching of Tachiwa et al., then such a person would obtain no direction toward the composition of pending claim 19.

On the contrary, Tachiwa et al. teaches that a phosphoric acid compound (A) (see page 2, line 11 and claim 1) must necessarily be present in order to prevent corrosion. Also in all examples of Tachiwa et al. the phosphoric acid compound (A) is present. Therefore, the phosphorous compound (A) is a mandatory feature that - according to the teaching of Tachiwa et al. - cannot be exchanged with some other ingredient.

Therefore, the teaching of Tachiwa et al leads directly away from the present invention.

Even in the unlikely case that an ordinarily skilled person in the art would exchange the phosphoric acid compound (A), he would have to conduct a selection out of a list of 19 compounds (see page 2, lines 43-46 of Tachiwa et al).

Consequently, it is most implausible that the ordinarily skilled person would exchange the phosphoric acid compound (A) by the amines according to the present invention.

The presence of one or more silicates which have been stabilized by organosilicophosphonates and/or organosilicosulfonates according to the amended version of claim 19 above is important for the inhibition of glass corrosion (see page 4, lines 19-32 of the specification as originally filed). This is also evident by the examples on page 7 and following of the originally filed specification.

- (iii). The combination of Tachiiwa et al with Oppenlaender does not render the claimed invention unpatentable.

Oppenlaender et al discloses a borate-containing antifreezing mixture for internal combustion engines. Therefore, Oppenlaender leads away from the present invention which is drawn to borate-free heat transfer liquids.

A person skilled in the art would not use the teaching of a remote art area such as Tachiiwa et al and substitute a mandatory compound (phosphorous acid compound (A)) therein with another compound selected out of a relatively long list and then additionally combine this teaching with a feature disclosed in another document that describes a further nonanalogous application area (Oppenlaender et al.) in order to arrive at the presently claimed invention.

Therefore, claim 19 and the claims dependent therefrom are patentably unobvious over Tachiiwa et al in view of Oppenlaender et al.

- (iv). The Combination of Tachiiwa et al with Smith does not render the claimed invention unpatentable.

As noted above, the fields of endeavor of antifreeze compositions for internal combustion engines and heat transfer liquids for solar plants are not analogous to one another for the purpose of determining patentability under 35 USC §103(a). Therefore, the fact that Smith may in fact disclose glycol-based heat transfer liquids for solar collector systems (and thus is in direct contact with the double paned windows thereof) would most certainly not be suggestive that the antifreeze composition of Tachiiwa would or could be employed in a similar manner. To be sure, even if an ordinarily skilled person might contemplate such a substitution, the presently claimed invention as defined by pending claim 19 and the claims dependent therefrom would not be the result.

As such, withdrawal of the rejection advanced under 35 USC §103(a) based on the combination of Tachiiwa et al and Smith is likewise in order.

WENDEROTH et al
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3. Fee Authorization

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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